

warp by means of multiplication signs, and correspondingly by means of dashes below the weave; to be $6\frac{1}{2}$ inches wide in reed.

Weave: For weave-plan see diagram C; repeat 52 warp-threads and 8 picks.

Draw: 10-harness, fancy draw.

Filling: 48 picks per inch, arranged thus:

3 picks $\frac{2}{56}$'s worsted, gray mix.

1 pick 2-ply cheviot, 4 run gray and $3\frac{1}{2}$ run black, tw.

—
4 picks in repeat of pattern.

Finish: Cheviot finish, full slightly, shear, etc., 52" finished width.

Mouliné Dress Goods.

FOR FABRIC SEE PHOTOGRAPHIC REPRODUCTION FIG. D.

Warp: 5200 ends.

Dress: 13 sections each containing 13 patterns @ 80 ends, or 400 ends total.

Arrangement of Warp:

79 ends $\frac{2}{64}$'s worsted, raw-white, twisted over with 60's white cotton.

1 end $\frac{2}{54}$'s cotton, light green.

—
80 ends in repeat of pattern.

Reed: $22\frac{1}{2}$ with 4 ends per dent, or 90 ends per inch, using one dent for the four ends plain; or use reed 28, drawing 4 dents with 3 ends each, placing the four remaining ends in the repeat of the weave) in every fifth dent, as indicated by means of dashes below the weave; to be 58 inches wide in reed.

Weave: For weave-plan see diagram D; repeat 32 warp-threads and 4 picks.

Draw: 10-harness fancy draw or 16-harness straight draw.

Filling: 68 picks per inch, all single 32's worsted raw-white.

Finish: Scour well, dye olive or any other fashionable color, changing in the latter instance when dressing the warp, the one end green to its proper color, clear face; 52 inches finished width of fabric.

An Improved Process for the Manufacture of Artificial Silk from Viscose.

The same refers to a process lately patented abroad, when viscose which is only slightly ripened is coagulated in a bath containing 27 per cent sodium bisulphate and 12 per cent sodium sulphate at 50 degrees C. The degree of concentration is so high that the liquid carried by the thread deposits crystals on the spool, and so it becomes necessary to rotate the spools in an aqueous bath of sodium bisulphate (7 per cent.).

Water cannot be used for this washing because the newly formed thread, which is xanthogenate of cellulose, is soluble in water, and it is only gradually converted into insoluble cellulose hydrate under the influence of the bisulphate carried over with it. The threads are then washed on spools and dried.

These threads it is claimed are stronger than all other silk threads, and also have larger covering power. It is essential that the coagulating bath of sodium bisulphate and sodium sulphate should be heated.

MANUFACTURE OF NARROW WARES.

Ribbons, Trimmings, Edgings, etc.

(Continued from page 118.)

Two Systems Filling.

In connection with weaves constructed with a face and a back filling (in connection with one system of warp) neither system of filling should show on its reverse side. This will result if observing in the construction of these weaves the following rule:

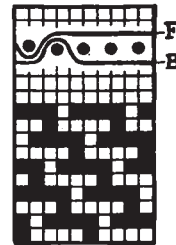


Fig. 46

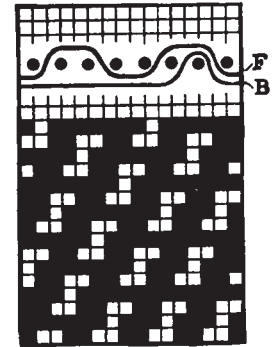


Fig. 47

In the back picks only such warp-threads can be lowered which are down in the preceding and the following face pick.

In the face picks only such warp-threads can be raised which are also raised, on the preceding and the next following back pick.

Fig. 46 shows such a weave with 5-harness satin for the interlacing of face and back filling.

Fig. 47 shows a weave with 4-harness even sided twill for the interlacing of the face filling, and 8-harness satin for the interlacing of the back filling.

Above weaves Figs. 46 and 47, a section of each respective fabric structure is given, showing face and back filling marked respectively *F* and *B*, the section of the warp threads (one repeat of weave) being shown by *circles*.

Face Interior and Back Picks.

In this instance, on the face of the fabric, the face pick only shall be seen, and on the back of the fabric the back pick only, the interior pick being introduced into the structure solely to increase the bulk of the latter and is neither visible on its face nor its back.

For warp-threads to be raised at the face pick select such threads as are up on the interior pick preceding and following said face pick, whereas in connection with the back pick, sinkers of the warp then used must be down on the interior pick preceding and following said back pick.

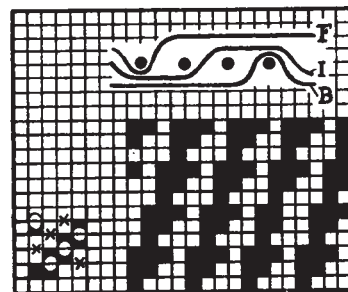


Fig. 48

Fig. 48 shows us such a weave, having the $\frac{1}{3}$ -4-harness twill for face picks, the 4-harness even sided

twill for the interior picks and the $\frac{3}{1}$ -harness twill for the back picks.

Above the weave a section of the fabric structure as interlaced with this weave is given, showing one pick each of face (F) back (B) and interior (I) filling.

In the experimental plan given at the left of the weave, a *cross* indicates warp-threads down at back picks; and *circle* warp-threads up at face picks.

Tubular and Double Cloth Weaves.

By means of these weaves two independent fabrics (one above the other) are constructed in the loom. According to the way of entering the filling, respectively in the upper and the lower fabric structure, the two structures are either not at all connected with each other, or they are connected with each other either at one or both edges.

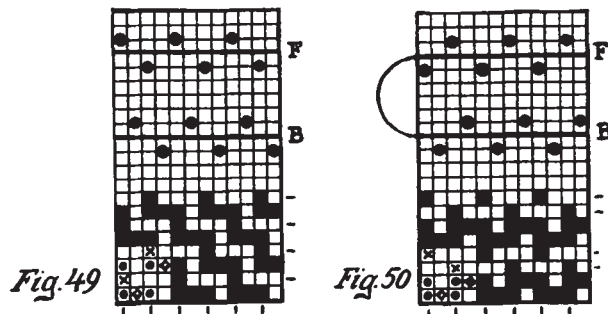
Two independent fabrics, minus connections, are obtained if using a separate shuttle for each ply of the fabric, an arrangement which however is seldom (if ever) used in connection with narrow ware fabrics.

Using only one shuttle in connection with a double cloth structure, arranged one pick face to alternate with one pick back, the result will be that the two plies are connected at their edges, *i. e.*, a hollow, tubular fabric is formed.

Using one shuttle in connection with double cloth, arranged two picks face: two picks back, will result in a fabric connected only at one edge, the other edge, showing the two independent plies (double edge galtons, double edge velour edgings).

The warp-threads, in connection with these weaves are divided into such as will interlace only either in the face or in the back ply.

When planning for the construction of these weaves, be sure that all back warp-threads are down when interlacing the face ply, since if threads of the



lower ply would then be raised, both plies would be united into one fabric.

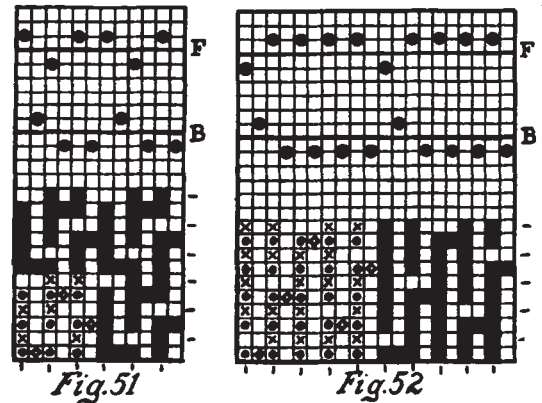
On the face picks (light picks, since then the least warp-threads are raised) only such risers, *i. e.*, face warp-threads up, are marked as refer to the weave of the face ply only, face warp-threads not raised resting inside of the tubular fabric structure. All warp-threads of the back ply are down on these face picks.

On the back picks (heavy picks, since then the greater portion of the warp-threads are raised) lift every face warp-thread, since otherwise the face ply would interlace into the back ply. Next indicate the risers for the back structure for said pick, *i. e.*, such of the interlacings of warp-threads as in the structure rest in the inside of the tubular fabric. The raised face ply warp-threads and the lowered back ply warp-threads form the outside of the tubular fabric structure.

If constructing a tubular or double cloth weave which shall show on its outside (on face and back) the $\frac{3}{1}$ -harness twill, the face warp-threads must then be raised on three successive face picks and lowered on one face pick, whereas the back warp-threads must be lowered on three successive back picks and raised on the next back pick.

When planning tubular or double cloth weaves, indicate on your weave plan which are the face and which the back warp-threads and picks, after which:

- (1) raise all face warp-threads on all back picks.
- (2) paint weave for the face fabric on face picks,



considering face warp-threads only; all back warp-threads are left down.

(3) paint weave for back ply on the back picks, considering back warp-threads only; all face warp-threads are raised.

If using a stuffer warp, for the interior of a tubular structure, the same must be raised on all back picks and lowered on all face picks.

To illustrate subject, weave plans Figs. 49, 50, 51 and 52 are given; no selvages are taken into consideration, they being dealt with later on in connection with the articles on tubular selvages and tubular cords.

In connection with weaves Figs. 49, 50, 51 and 52, the face warp-threads and the face picks are indicated respectively at the bottom and at the side of the weave by means of a *dash*. In the left hand lower corner of each illustration one repeat of the weave is shown executed in different types, to illustrate the building up of the double cloth structure, and where *cross* type represents the interlacing of the face warp (*up*) in the face picks. *Diamond* type in the weave indicates the interlacing of the back warp (*up*) in the back picks. *Dot* type in the weave indicates the raising of all the face warp on every back pick.

Weave Fig. 49 shows the placing of two plain woven fabrics, one above the other. Above said weave is given a diagram of the positioning of the warp-threads in connection with one face (F) and one back (B) pick.

Fig. 50 shows us a double plain weave, arranged 2 picks face to alternate with 2 picks back, showing in the section of the fabric, as given above the weave, the connection of the two fabrics on one side; *i. e.*, the filling, after interlacing with the plain weave for 2 picks in one of the plies, then passes for 2 picks, plain weave, in the other ply.

Fig. 51 shows us a tubular fabric interlaced with 3-harness twill, and Fig. 52 a tubular fabric interlaced with 5-harness satin.

(To be continued.)